

Effect of Project Management Assets on Employee Performance Within State-Owned Enterprises (SOEs) in the UAE

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Abstract: Project management assets are becoming an integral part of every aspect and activity in today's organizations that are crucial to survive in a competitive environment and thus has a profound impact on the performance of the employees. State owned Enterprises (SoE) of Abu Dhabi are the focus of this paper as they are considered the key economic power-house both at the local and federal government levels. Applying a resource-based analysis, namely the VRIO framework (VRIO is an acronym for Value, Rarity, Imitability and Organisation) to examine the effect of these assets on employees performance. The data was collected from 539 employees of State Owned Enterprises (SOE) of Abu Dhabi and analysed using Structural Equation Modelling (SEM) via SmartPLS 3.0. There were two main results; first, value, rarity, imitability and organization have a positive impact on cost; second, value, rarity and imitability are significantly predicting time. The proposed model explained 62% of the variance in cost and 56% of the variance in time. Theoretical and practical implications are also provided.

Key words: Project management assets, employee performance, state-owned enterprises, VRIO, UAE, Abu Dhabi

INTRODUCTION

Achieving greater performance is at the heart of the existence of every entity and it can be attained through different ways (Aldholay *et al.*, 2018a-c). Some organizations think of their internal capabilities while others account on their external position. Traditionally in their quest for project success, project managers are faced with crucial challenges to overcome such as physical teams to virtually managed project teams, clearly defined project goals, high project transparency, adequate control methods, predefined project methods, communication efficiencies and sufficient risk management. Project objectives and project management in general has transpired with little consideration of key project stakeholders. As stressed by Comu *et al.* (2010), future business management would involve network organizational structures and virtual development teams in the course of produce development.

In the project management literature, resources represent a source of competitive advantage or any assets provided being characterised as having economic Value (V), Rare (R), Inimitable (I) and they have Organizational support (O) to leverage these assets (Barney, 1991; Barney and Hesterly, 2014). In an integrated theoretical

framework referred to as the VRIO framework, a resource that has organizational support contributes to competitive parity by being valuable it contributes to temporary competitive advantage if it is both valuable and rare and it provides sustained competitive advantage if it is valuable, rare and inimitable.

The context of this study is State Owned Enterprises (SOEs) of Abu Dhabi Emirate. They are the key economic power-house both at the local and Federal government levels. To shed more light on the background of the SOEs, their diversity in terms of culture and orientation to management in the form of projects it may be noted that the United Arab Emirates (UAE) after gaining independence in 1971 has witnessed one of the fastest growing economies in terms of GDP globally. Thanks to companies in this area, especially Abu Dhabi National Oil Company (ADNOC), ADWEA, DEWA and other SOEs related to the travel and oil and gas sector. It is important to mention that Dubai is more diversified and has built a large private sector than Abu Dhabi Emirate (Anonymous, 2017). Nonetheless, the Abu Dhabi is major contributor to Oil GDP of UAE. In addition it is important to mention that the SOEs rely heavily on foreign workers from over 200 different national backgrounds. The challenge of working with different nationalities remains a major issue to

multinational companies, SOEs and the UAE at large. Investigating the characteristics of project management process in SOEs would be of tremendous benefit to the UAE SOEs, multi-national businesses and other global enterprises at large.

The objective of this study is to examine the impact of project management assets namely, value, rarity, imitability and organization on employee performance (cost and time) to enhance the understanding of project management asset role in SoE in the United Arab Emirates.

Literature review

Employee Performance (EP): Several assertions have been made regarding the association between project management and organizational performance. Studies in this area include Barney (1991), Newbert (2007), Jugdev *et al.* (2007), Irefin (2013) and others. These sources have usually associated project management with competitive advantage which in turn leads to performance in key areas of business management. The need to adopt project management approach to march performance effectiveness and efficiency is not new as Irefin (2013) emphasize that at least 50% of all work are usually carried out in the form of projects even though not all areas of initiation, planning, execution, monitoring and others are not strictly considered. Even though studies on effect of project on larger organizational performance has been observed, the employee performance as a dependent variable has not gained much attention.

Employee performance measurement and other work performance indicators have to some extent been considered as a measure of project management (Usmani, 2013). This is true despite a lack of clear literature establishing the association between project management and employee performance, considering employee performance is different in many ways from organizational performance. Nevertheless, project management assets used for the measurement of variables were debated as leading to performance at the organizational levels.

All project management assets of value (Barney and Hesterly, 2014), rarity (Tuan and Yoshi, 2010), imitability (Barney, 1991) and organization (Barney and Hesterly, 2014) have been associated with organizational level usually as a major contributor to these areas of project management assets from a strategic perspective. At the employee level, these have not been considered and remain exploratory.

Project management is measured with the help of four characteristics of project management assets acronym VRIO and mentioned by Jugdev and Mathur (2006),

Jugdev *et al.* (2007). Before attention is offered to how characteristics of project management may translate into competitive advantage or may affect employee performance, there is the need to focus on how project assets characteristics are associated with project assets. There is no doubt project management remains a source of competitive advantage for any organization. The source of competitiveness is established from two main sources in terms of resources; tangible and intangible assets (Barney, 1991). Whereas tangible assets enhance the value and organizational support dimensions, intangible assets can fit all four areas of the key characteristics of project management success. Essentially, tangible assets are not rare and can only enhance value and organizational support. This study is interested in the capacity of project management asset characteristics to transform into specific competitive outcomes, building from tangible and intangible assets. The VRIO framework has been described as a strategic tool for analysing the internal environment of the firm (Barney and Hesterly, 2014), this framework can equally be used to manage the internal environment of the project and how tangible and intangible resources are challenged to meet project success criteria. Considering the three main areas of project success criteria (cost/value and time).

Project Management Assets (PMA): A firm is a collection of resources which can be tangible or intangible and include financial, human, organizational, physical, social and technological assets (Teece *et al.*, 1997). A project has been defined, according to Atkinson (1999) as a system which does not remain constant but experiences continuous change, moving from one state or form to another. Jugdev and Mathur (2006) on the other hand also defined project as a group of people with task executed within a fixed timeframe, directed at achieving a specific set of identifiable objectives. Akarakiri *et al.* (2012) also defined projects as a scheme that can be reasoned, analysed and considered to be an independent unit.

Previous empirical research reports on factors that create project management assets and relates them to the Value, Rarity, Imitability and Organization characteristics of the project management process achievement (Jugdev and Mathur, 2006; Mathur *et al.*, 2007; Mathur *et al.*, 2013, 2014). This study takes a step further to link the project management assets characteristics (V, R, I and O) to employee performance outcome (cost and time). Consequently, the following hypothesis are proposed:

- H₁: value has a positive effect on cost
- H₂: value has a positive effect on time
- H₃: rarity has a positive effect on cost

- H₄:rarity has a positive effect on time
- H₅:imitability has a positive effect on cost
- H₆:imitability has a positive effect on time
- H₇:organization has a positive effect on cost
- H₈:organization has a positive effect on time

MATERIALS AND METHODS

Overview of the proposed research model: For this study, the hypothesized variables and their relationships in the model have been derived from the available literature of the models and theories that have been prescribed in the literature mentioned above. The proposed model can be seen in Fig. 1. While examining the proposed model it can be seen that project management assets characteristics VIRO (Value, Rarity, Imitability and Organization) predicts employee performance (cost and time). These relationships are derived from (Barney and Hesterly, 2014; Jugdev and Mathur, 2006) whereas employee performance is taken from (Usmani, 2013). The proposed extended model examines the relationship between value, rarity, imitability and organization as antecedent variables that explain employee performance in terms of cost and time as an output variable among employees in State-Owned Enterprises SOE in the United Arab Emirates. The proposed model has eight hypotheses to test.

Development of instrument: A 25-item questionnaire was developed for this study and in line with existing literature in the project management assets field, a multi-item Likert scale was applied (Lee *et al.*, 2009). Variables were measured using a Likert scale which recommended in the previous studies (Isaac *et al.*, 2017a-e) with 7 being

‘Strongly agree’ and 1 being ‘strongly disagree’. Because respondents were Arabic-speakers it was vital that the questionnaire be precisely translated from English to Arabic. Therefore, a back translation was performed, a procedure extensively applied to test the precision of the translation in a cross-cultural survey (Brislin, 1970). Validated instruments were adapted from related previous studies to measure the variables of this study as shown in Table 1. With regard to item count for every construct, this study followed the directions of Hayduk and Littvay (2012) who suggested using the few best items and that many items are rarely warranted because additional redundant items provide less research benefit.

Data collection: Data collection was conducted using a self-administered paper questionnaire which was delivered ‘in-person’ from December 2016 till February 2017 to employees. The employees were approached while in main facilities at Abu Dhabi Water and Electricity Authority (ADWEA), Dubai Electricity and Water Authority (DEWA), Sharjah Electricity and Water Authority (SEWA) and Federal Electricity and Water Authority (FEWA), they were given the questionnaire to be filled and left at the same place to be collected in the same day. A total of 900 questionnaires were distributed, with 560 sets returned of which 541 responses were useful for the analysis. The final sample size was considered as adequate (Krejcie and Morgan, 1970; Tabachnick and Fidell, 2012). The 62% response rate is considered very good (Cable and Derue) and above average (Baruch and Holtom, 2008) by comparison with other studies found in the relevant literature. A total of 19 questionnaires were deleted of which 15 cases were removed due to missing data for more than 15% of the questions and 4 cases involving straight lining.

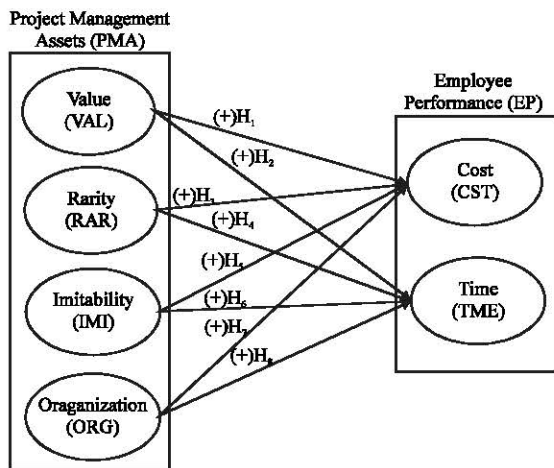


Fig. 1: The proposed model. (+) represent a positive relationship between the variables

RESULTS AND DISCUSSION

Data analysis and results: Partial Least Squares (PLS) Structural Equation Modeling-Variance Based (SEM-VB) was utilized to examine the research model in this research by using the SmartPLS 3.0 Software (Ringle *et al.*, 2015). A two-stage analytical method (Anderson and Gerbing, 1988; Hair *et al.*, 2017) comprising, measurement model assessment (validity and reliability) and structural model assessment (testing the hypothesized relationships) was used after conducting the descriptive analysis. This two-stage analytical method consisting of a measurement model and a structural model assessment is superior to a one-step assessment (Schumacker and Lomax, 2004; Hair *et al.*, 2010). While the measurement model explains

Table 1: Instrument for variables

Variable/Measure	Source
Value (VAL)	
VAL1: Project management has helped us be better, faster and cheaper in what we do	
VAL2: Project management has increased our profitability	
VAL3: Project management has increased our overall business performance	
VAL4: Managing things in the form of projects at my organization help us respond to industry threats and opportunities	
VAL5: We used project management to provide better products and services	
VAL6: Project management is a source of competitive advantage to my company	
Rarity (RAR)	
RAR1: We made rare decisions in the past which helped us achieve success through project management	
RAR2: Organizations who do not use project management the way we do have a cost disadvantage	
RAR3: It will be difficult to copy practice of project management in my company	
Imitability (IMI)	
IMI1: Many organizations in our industry do not practice project management the way we do	(Jugdev and Mathur, 2006)
IMI2: How we practice project management makes the practice unique to my organization	
IMI3: Even if 1/3 of those people that practice project management in my company lest tomorrow, project management will still not change	
IMI4: Relative to our competitors, project management in my company is unique	
Organization (ORG)	
ORG1: We are well organized to practice project management at my organization with policies, procedures and routines	
ORG2: Project management is important to the mission of our organization	
ORG3: Project management is an organization-wide initiative	
ORG4: Executive at my organization have formal project management roles	
ORG5: Executive at my organization are effective at their project management roles	
ORG6: We benchmark regularly to assess best practices in project management that could improve our practices	
ORG7: Our project management practice has improved year by year	
Cost (CST)	
CST1: As this institution, employees are able to cut cost	
CST2: At this institution, employees are able to meet performance standards that are monitored by a cost control system	
CST3: Employees in this institution are able to meet low-cost standards than competitors	
Time (TME)	
TME1: Employees are able to complete work in time	(Comu <i>et al.</i> , 2010; Kagaari <i>et al.</i> , 2010; Zhu and Huang, 2007)

the measurement of each construct, the structural model defines the relationship between the variables in the structural model (Hair *et al.*, 2017).

The use of PLS technique for both the measurement and the structural model in this research is due to its ability to perform simultaneous analysis, resulting in more precise assessments (Barclay *et al.*, 1995). The main reasons for choosing SEM as a statistical method for this study is that SEM offers a simultaneous analysis which leads to more accurate estimates (Isaac *et al.*, 2016, 2017a-e).

Descriptive analysis: Table 1 presents the mean and standard deviation of each variable in the current study. The respondents were asked to indicate their opinion in relation to their online learning usage based on a 7-point scale ranging from 1 (strongly disagree) to 7 (strongly agree). Value recorded mean score of 4.56 out of 7.0 with a standard deviation of 1.49, indicating that the respondents agreed that project management has helped them be better, faster and cheaper in what they do increased their overall business performance, help them respond to industry threats and opportunities. Rarity recorded mean score of 4.60 out of 7.0 with a standard deviation of 1.47, indicating that the respondents agreed

that it will be difficult to copy practice of project management in their company. Imitability recorded mean score of 4.70 out of 7.0 with a standard deviation of 1.49, indicating that the respondents agreed that many organizations in their industry do not practice project management the way they do and how they practice project management makes the practice unique to their organization. Organization recorded mean score of 4.60 out of 7.0 with a standard deviation of 1.45, indicating that the respondents agreed that project management is important to the mission of their organization they benchmark regularly to assess best practices in project management that could improve their practices and their project management practice has improved year by year.

Measurement model assessment: Construct reliability and validity (consisting of convergent and discriminant validity) were utilized to test the measurement model. The individual Cronbach's alpha coefficients were examined to ascertain the reliability of each core variable in the measurement model (construct reliability). The values of all the individual Cronbach's alpha coefficients in this study were between 0.797-0.887 which exceeded the suggested value of 0.7 (Kannana and Tan, 2005; Nunnally and Bernstein). Furthermore, for testing construct

Table 2: Mean, standard deviation, loading, cronbach's Alpha, CR and AVE

Constructs/Item	Loading (>0.5)	M	SD	α (>0.7)	CR (>0.7)	AVE (>0.5)
Value (VAL)						
VAL1	0.902	4.56	1.49	0.887	0.918	0.691
VAL2	0.801					
VAL3	0.793					
VAL4	Deleted					
VAL5	0.761					
VAL6	0.890					
Rarity (RAR)						
RAR1	0.901	4.60	1.47	0.797	0.881	0.712
RAR2	0.806					
RAR3	0.821					
Imitability (IMI)						
IMI1	0.788	4.70	1.49	0.770	0.853	0.593
IMI2	0.767					
IMI3	0.732					
IMI4	0.791					
Organization (ORG)						
ORG1	Deleted					
ORG2	0.830					
ORG3	0.772					
ORG4	0.721	4.62	1.45	0.831	0.881	0.598
ORG5	0.702					
ORG6	Deleted					
ORG7	0.832					
Cost (CST)	CST1	0.901				
CST2	0.872	4.81	1.34	0.837	0.902	0.755
CST3	0.832					
Time (TME)						
TME1	0.920	4.83	1.32	0.887	0.918	0.691
TME2	0.916					

M = Mean; SD = Standard Deviation, α = Cronbach's alpha; CR = Composite Reliability, AVE = Average Variance Extracted. The measurement used is 7-point scale ranging from 1 (strongly disagree) to 7 (strongly agree). All the factor loadings of the individual items are statistically significant ($p < 0.01$) except for the items VAL4, ORG1 and ORG6 which eliminated from the scale due to low loadings. VAL; Value, RAR; Rarity, IMI; Imitability, ORG; Organization, CST; Cost, TME; Time

reliability, the values of all the Composite Reliability (CR) were between 0.881-0.918 which exceeded 0.7 (Werts *et al.*, 1974; Kline, 2010; Gefen *et al.*, 2000). Therefore, as illustrated in Table 1, construct reliability has been satisfied as Cronbach's alpha and CR were relatively error-free for all the constructs.

Assessment of indicator reliability was done by using factor loadings. When the associated indicators have much in common, this is captured in the construct and indicated by high loadings on the construct (Hair *et al.*, 2017). According to Hair *et al.* (2010), values exceeding 0.50 indicate significant factor loadings. Table 1 shows that all items in this study had factor loadings higher than the recommended value of 0.5, except for items VAL4, ORG1 and ORG6 which had low loadings. Therefore, they were removed from the scale. All other items in the model satisfied all the loading requirements.

Average Variance Extracted (AVE) was used in this study to assess convergent validity which shows the degree that a measure correlates positively with alternative measures of the same construct. The values of all AVE were between 0.593-0.755 which exceeded the

recommended value of 0.50 (Hair *et al.*, 2010). Therefore, all constructs have fulfilled the convergent validity satisfactorily as illustrated in Table 1.

The extent that items differentiate among constructs or measure distinct concepts is shown by discriminant validity. Cross-loadings, Fornell-Larcker and Heterotrait-Monotrait ratio (HTMT) were used to assess the discriminant validity of the measurement model. Usually, cross-loadings are used as the first step in testing discriminant validity of the indicators (Hair *et al.*, 2017). In this study, the indicator's outer loadings on a construct exceeded all its cross-loadings with other constructs and hence, the cross loading criterion had satisfied the requirements (Table 2).

Table 3 displays the results for discriminant validity by using the Fornell-Larcker criterion. It was found that the square root of the AVEs on the diagonals (shown in bold) are greater than the correlations between constructs (corresponding row and column values), indicating strong correlation between the constructs and their respective indicators as compared to the other constructs in the model (Fornell and Larcker, 1981; Chin, 1998a, b). According to Hair *et al.* (2017), this indicates a good discriminant validity. Furthermore, the exogenous

Table 3: Results of discriminant validity by the cross loading

Variables	VAL	RAR	IMI	ORG	CST	TME
VAL1	0.902	0.673	0.582	0.645	0.624	0.608
VAL2	0.801	0.570	0.627	0.584	0.556	0.498
VAL3	0.793	0.614	0.638	0.592	0.559	0.555
VAL5	0.761	0.494	0.656	0.626	0.464	0.458
VAL6	0.890	0.674	0.600	0.639	0.615	0.615
RAR1	0.691	0.901	0.592	0.654	0.637	0.585
RAR2	0.598	0.806	0.639	0.578	0.578	0.495
RAR3	0.564	0.821	0.627	0.570	0.604	0.580
IMI1	0.618	0.601	0.788	0.599	0.588	0.514
IMI2	0.551	0.612	0.767	0.546	0.555	0.560
IMI3	0.462	0.466	0.732	0.463	0.518	0.560
IMI4	0.646	0.571	0.791	0.713	0.552	0.539
ORG2	0.578	0.492	0.650	0.830	0.497	0.457
ORG3	0.650	0.650	0.511	0.772	0.590	0.547
ORG4	0.545	0.530	0.552	0.721	0.536	0.423
ORG5	0.500	0.564	0.564	0.702	0.543	0.519
ORG7	0.568	0.484	0.642	0.832	0.485	0.433
CST1	0.619	0.639	0.588	0.615	0.901	0.724
CST2	0.649	0.644	0.658	0.619	0.872	0.638
CST3	0.504	0.591	0.629	0.570	0.832	0.664
TME1	0.574	0.589	0.694	0.547	0.678	0.920
TME2	0.643	0.619	0.601	0.599	0.749	0.916

Bold values represent the indicator's outer loadings on their construct. VAL; Value, RAR; Rarity, IMI; Imitability, ORG; Organization, CST; Cost, TME; Time

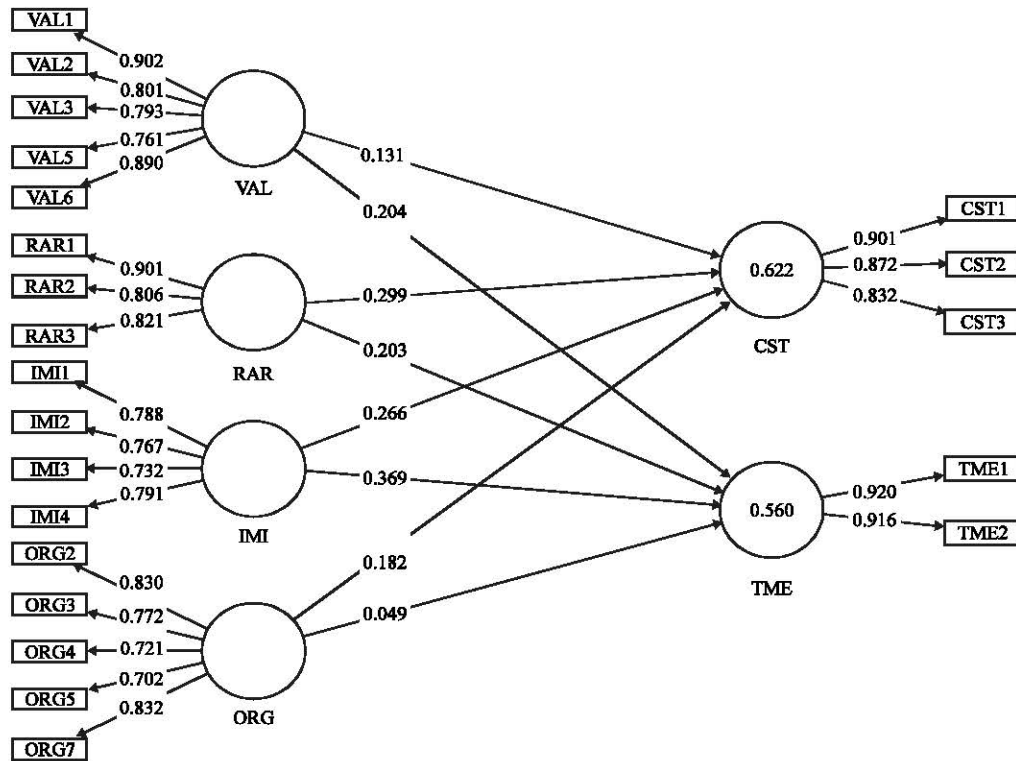


Fig. 2: PLS algorithm results. VAL; Value, RAR; Rarity, IMI; Imitability, ORG; Organization, CST; Cost, TME; Time

constructs have a correlation of <0.85 (Awang, 2014). Therefore, all constructs had their discriminant validity fulfilled satisfactorily (Fig. 2).

Structural model assessment: The structural model can be tested by computing beta (β), R² and the

corresponding t-values via a bootstrapping procedure with a resample of 5,000 (Hair *et al.*, 2017). They also suggested looking at the effect sizes (F²) and the predictive relevance (Q²). While p-value ascertains the existence of the effect, the effect size is not shown (Sullivan and Feinn, 2012).

Table 4: Results of discriminant validity by Fornell-Larcker criterion

Numbers	Factors	1	2	3	4	5	6
1	CST	IMI	ORG	RAR	TME	VAL	
2	CST	0.869					
3	IMI	0.719	0.770				
4	ORG	0.693	0.754	0.773			
5	RAR	0.720	0.732	0.713	0.844		
6	TME	0.777	0.706	0.624	0.658	0.918	
7	VAL	0.682	0.740	0.741	0.733	0.663	0.831

Diagonals (Bold Values) represent the square root of the average variance extracted while the other entries represent the correlations. VAL; Value, RAR; Rarity, IMI; Imitability, ORG; Organization, CST; Cost, TME; Time

Hypothesis tests: Figure 2 and Table 4 depict the structural model assessment, showing the results of the hypothesis tests with 7 out of the 8 hypotheses are supported. Value, rarity, imitability and organization significantly predict cost. Hence, H₁, H₅, H₆ and H₇ are accepted with ($\beta = 0.131, t = 2.219, p < 0.05$), ($\beta = 0.299, t = 6.507, p < 0.001$), ($\beta = 0.266, t = 5.204, p < 0.001$) and ($\beta = 0.182, t = 3.497, p < 0.001$), respectively. Likewise, value, rarity and imitability significantly predict time. Hence, H₂, H₄ and H₆ are accepted with ($\beta = 0.204, t = 3.755, p < 0.001$), ($\beta = 0.203, t = 4.533, p < 0.001$) and ($\beta = 0.369, t = 7.184, p < 0.001$), respectively. However, H₈ is rejected.

The strength of the relationship between exogenous and endogenous constructs are measured by the standardised path coefficients which in this case show that the direct effects of rarity on cost is much stronger than the influence of other variables. In addition, the direct effects of imitability on time is much stronger than the influence of other variables.

The 62% of the variance in cost is explained by value, rarity, imitability and organization. Moreover, value, rarity and imitability explaining 56% of the variance in time. The values of R² have an acceptable level of explanatory power, indicating a substantial model (Cohen, 1988; Chin, 1998a, b).

Effect sizes (F²) was examined in this research. According to Gefen *et al.* (2000), the effect size F² ascertains the impact of an exogenous latent construct (whether substantial, moderate or weak) on an endogenous latent construct. It is suggested that the change in R² value is assessed (Hair *et al.*, 2017). The F² value of 0.35 indicates large effects, 0.15 indicates medium effects and 0.02 indicates small effects (Cohen, 1988). Table 4 displays the F² results, indicating four medium effect sizes relationships and one small effect size relationship.

In assessing the predictive relevance of the proposed research model, this study had applied the blindfolding procedure. This procedure should be employed on endogenous constructs with a reflective measurement only (Hair *et al.*, 2017). According to Fornell and Larcker (1981) and Hair *et al.* (2017), a particular endogenous construct of the proposed model has predictive relevance if the value of Q² exceeded 0. In this study, all Q² values

were greater than 0 and hence, it can be concluded that the proposed model has an adequate predictive relevance (Table 4). Relative measure of predictive relevance is indicated by Q² values of 0.35 for large, 0.15 for medium and 0.02 for small. All exogenous constructs in this study were found to have large predictive relevance.

According to O'Brien the existence of multicollinearity poses a problem as it indicates overlapping of the variance that the exogenous constructs explain in the endogenous construct. Therefore, it cannot justify each variance in the endogenous variable. Variance Inflation Factor (VIF) is commonly used as a measurement of the degree of multicollinearity. A value exceeding 10 for the largest VIF indicates a problem (Bowerman and O'Connell, 1990, Myers, 1990). Meanwhile, Hair *et al.* (2017) suggested that a value exceeding 5 for the largest VIF indicates a multicollinearity problem. The VIF values in this study are between 2.750 and 3.063 (i.e., <5) and hence, there is no significant multicollinearity issue among the exogenous constructs. In other words, there is no overlapping of the variance that the exogenous constructs explained in the endogenous construct.

Importance-Performance Map Analysis (IPMA):

Importance-Performance Matrix Analysis (IPMA) was employed as a post-hoc PLS procedure in this study with the actual usage of online learning used as the outcome construct. According to Hair *et al.* (2017), the IPMA provides an estimation of the total effects corresponding to the importance of predecessor constructs in affecting the target construct (actual usage); the average latent variable scores correspond to their performance whereas the index value's (performance scores) calculation was achieved by rescaling the scores of the latent constructs to within a range from 0 (lowest performance) to 100 (highest performance). IPMA enhances the results of PLS analysis (Ringle and Sarstedt, 2016) because it gives attention to the latent construct's average value as well as their indicators (the performance dimension) in addition to performing the path coefficients analysis (the importance dimension). The results for total effects (importance) and index values (performance) of the IPMA of the outcome constructs cost and time are displayed in Table 5-7.

The scores for total effects and index values were plotted on a priority map (Fig. 3). It can be observed that rarity is very important factor in determining the cost due to its relatively higher importance values compared to other constructs in the proposed model. Imitability is the second important factor in determining the cost. While the weak factors is value.

Nevertheless, the performance of this significant factor (rarity) lagged behind other factors (value and organization). According to Hair *et al.* (2017) the goal of IPMA is to identify predecessors that have a relatively

Table 5: Structural path analysis result

Hypothesis	Relationship	Std. Beta	SE	t-values	p-values	Decision	R ²	F ² -values	Q ² -values	VIF
H ₁	VAL→CST	0.131	0.059	2.219	0.013	Supported	0.62	0.015	0.435	2.964
H ₂	VAL→TME	0.204	0.054	3.755	0.000	Supported	0.56	0.032	0.441	2.964
H ₃	RAR→CST	0.299	0.046	6.507	0.000	Supported		0.086		2.750
H ₄	RAR→TME	0.203	0.045	4.533	0.000	Supported		0.034		2.750
H ₅	IMI→CST	0.266	0.051	5.204	0.000	Supported		0.061		3.063
H ₆	IMI→TME	0.369	0.051	7.184	0.000	Supported		0.101		3.063
H ₇	ORG→CST	0.182	0.052	3.497	0.000	Supported		0.030		2.947
H ₈	ORG→TME	0.049	0.052	0.959	0.169	Not supported		0.002		2.947

VAL; Value, RAR; Rarity, IMI; Imitability, ORG; Organization, CST; Cost, TME; Time

Table 6: IPMA for cost

Latent constructs	Total effect of the construct cost (Importance)	Index values (Performance)
Value (VAL)	0.131	59.89
Rarity (RAR)	0.299	59.24
Imitability (IMI)	0.266	61.71
Organization (ORG)	0.182	59.97

Table 7: IPMA for time

Latent constructs	Total effect of the construct time (Importance)	Index values (Performance)
Value (VAL)	0.204	59.89
Rarity (RAR)	0.203	59.24
Imitability (IMI)	0.369	61.71
Organization (ORG)	0.049	59.97

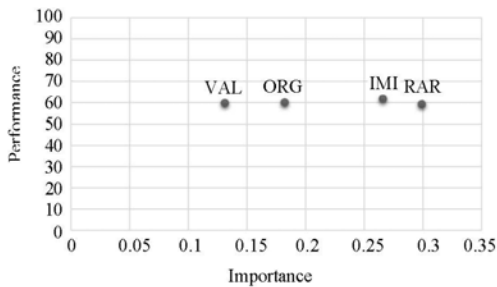


Fig. 3: IPMA (Priority Map) for cost. VAL; Value, RAR; Rarity, IMI; Imitability, ORG; Organization

high importance for the target construct (i.e., those that have a strong total effect) but also a relatively low performance (i.e., low average latent variable scores), the aspects underlying these constructs represent potential areas of improvement that may receive high attention.

Although, variables such as value scored relatively intermediate in performance it has small relevance in influence cost. In sum in order to improve the cost, the managerial activities should focus on enhancing the performance of rarity.

As shown in Fig. 4, it can be observed that imitability is very important factor in determining the time due to its relatively higher importance values compared to other constructs in the proposed model. Value and rarity are the second important factors in determining the time. While the weak factors is organization.

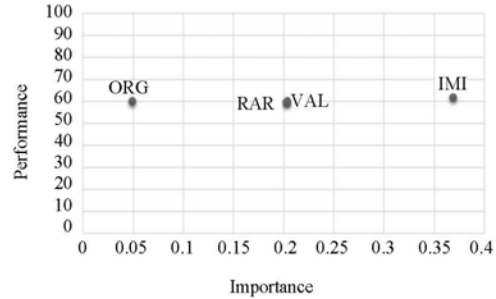


Fig. 4: IPMA (Priority Map) for time. SIZE; Size, AGE; Age, EDU; Education, EXP; Experience, INN; Innovativeness, PRO; Pro-activeness, RT; Risk-taking, AU; Autonomy, FF; Financial Factor, PF; Physical Factor, HF; Human Factor

Nevertheless, the performance of this significant factors (value and rarity) lagged behind the organization. According to Hair *et al.*, (2017) the goal of IPMA is to identify predecessors that have a relatively high importance for the target construct (i.e., those that have a strong total effect) but also a relatively low performance (i.e., low average latent variable scores), the aspects underlying these constructs represent potential areas of improvement that may receive high attention.

Although, variables such as organization scored relatively intermediate in performance it has small relevance in influence time. In sum in order to improve the time, the managerial activities should focus on enhancing the performance of imitability.

Based on the proposed model, this study improves the understanding of the role played by project management assets in terms of employee performance in state-owned enterprises SOE in the United Arab Emirates and highlights relevant implications and suggestions for management and policy makers.

The study found that value positively affect cost. This is explained by the fact that the more project management asset is enhancing the overall performance and profitability, the more employees are able to cut cost and meet performance and low-cost standards compared to competitors. These results are in line with previous studies in the project management assets field

(Fortune *et al.*, 2011; Mathur *et al.*, 2007). Besides, value was found to positively affect time. This is explained by the fact that the more project management asset is enhancing the overall performance and profitability, the more employees are able to complete work on time and be within the planned schedule. These results are in line with previous studies in the project management assets field (Aubry *et al.*, 2007; Patanakul *et al.*, 2010).

Likewise, rarity was found to positively affect cost. This is explained by the fact that the more project management asset is considered rare where competitors do not possess it the more employees are able to cut cost and meet performance and low-cost standards compared to competitors. These results are in line with previous studies in the project management assets field (Besner and Hobbs, 2004). Moreover, rarity was found to positively affect time. This is explained by the fact that the more project management asset is considered rare where competitors do not possess it the more employees are able to complete work on time and be within the planned schedule. These results are in line with previous studies in the project management assets field (Aghazadeh, 2015; Karpen *et al.*, 2015).

Additionally, imitability was found to positively affect cost. This is explained by the fact that the more project management asset is unique and hard to imitate and is specific to this business, the more employees are able to cut cost and meet performance and low-cost standards compared to competitors. These results are in line with previous studies in the project management assets field (Besner and Hobbs, 2006; Jugdev *et al.*, 2007). Further, imitability was also found to positively affect time. This is explained by the fact that the more project management asset is unique and hard to imitate and is specific to this business, the more employees are able to complete work on time and be within the planned schedule. These results are in line with previous studies in the project management assets field (Aghazadeh, 2015).

Finally, organizational aspects was found to positively affect cost. This is explained by the fact that the more project management asset is supported by an a formal project management role which is included in the mission of the enterprise, the more employees are able to cut cost and meet performance and low-cost standards compared to competitors. These results are in line with previous studies in the project management assets field (Besner and Hobbs, 2004; Sanjuan and Froese, 2013). However, it was found that organization does not influence time. These results are in line with previous studies in the project management assets field (Njoya and Niemeier, 2011) and can be explained by the notion that theories and models of management do not serve equally across contexts (Akarakiri *et al.*, 2012; Jugdev *et al.*, 2007).

LIMITATIONS

In addition to the limited scope of the study and limitations with regard to sample size, response rate and self-report bias it is believed that this study has a valid and reliable instrument to test relationships between the factors and examine hypothesis that the valuable, rare, inimitable and organization characteristics of project management assets will predict employee performance outcomes. Moreover, cross-sectional was used as the research design of this current research whereby all the variables incorporated in the hypothesized model were evaluated at a single point in time. According to Wulf (1999), no definite conclusions can be drawn from such an approach, specifically regarding the causality of relationships among variables. As for future research, Hofstede mentioned that UAE is among the countries that have a high power distance where people accept hierarchical order and centralization is popular. Organizational structure is seen as a crucial to better employee performance. Based on that future researchers could extend the proposed model in this study by adding the role of organizational structure (Mutahar *et al.*, 2018).

IMPLICATIONS

Implications for research: This study has applied the resource based value of the State-owned Enterprises SoE in the United Arab Emirates to examine project management capabilities as a source of competitive advantage and its effect on the performance of employees. This research can be seen as an attempt to contribute to the understanding of the characteristics of project management assets that lead to a firm's competitive advantage and thus enhanced employees performance. This concept has significant value for researchers interested in project management. It is differentiated from prior research that has explored the link between assets and the achievement of the VRIO characteristics from the process by extending the conceptual model to link VRIO characteristic to employee performance. It can be distinguished from previous models in proposing that organizational culture as a moderating variable that is required for assets that are valuable, rare and inimitable to contribute to project management outcomes in terms of employee performance. This research offers empirical support to the theoretical relevance of valuable, rare, imperfectly imitable and organizational conditions of resources and capabilities that permit efficient and effective value creation.

Implication for practice: The United Arab Emirates has a long-term strategy which aimed to develop a reliable and efficient administration to its State-owned Enterprises SOE by improving the management of its assets to deliver

lasting benefits for all its citizens and gain recognition around the world. The implications of this study could provide significant benefits to managerial boards and policy makers at these enterprises on how to utilize its strategic assets in a way that enhance the performance of its employees. A number of practical implications were found such as understanding the factors that influence the cost and time factors which lead to improving professional practice, professional development and quality of work. Significantly, the implications of using the proposed model provide an understanding of the relationships of key determinants to employee performance which leads to improving productivity and effectiveness.

This research also contributes to practice by focusing managerial attention to project management assets as sources of competitive advantage. It highlights that project management assets are not only a set of tools and techniques to achieve a project objectives but also include intangible elements that are embedded in the routines and relationships of an organization (Aldholay *et al.*, 2018a-c).

CONCLUSION

Although, the United Arab Emirates government institutions and its state-owned enterprises are ahead of regional counterparts in terms of performance it is striving to enhance its employee performance in terms of cost, time and quality (Global Innovation Index, 2016), the findings of this study could be considered as one of the initiatives to serve on that direction. The main objective of this study is to determine factors that affect employee performance within state-owned enterprises in the United Arab Emirates. Despite various constraints to the study, the results have been encouraging as it has managed to throw some lights on a new perspective. This study proposed a model which include project management characteristics namely, value, rarity, imitability and organization as independent variables and employee performance in terms of cost and time as the dependent variable. The results revealed that the four independent variables significantly explain 62% of cost and 56% of time. The implications of this study from the perspective of research and practitioners have been deliberated, limitations have been noted and some directions for future research have been suggested.

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